Amendments to the Claims:

1. (Currently amended) A search method comprising the acts of:

    (a)   using N bits, N being an integer, from a packet as an index into a data structure including a Direct Table with at least one entry and a tree structure operatively coupled to said one entry;

    (b)   setting a threshold based upon a <u>fixed number of nodes to be traversed in</u> ~~first predetermined characteristic of~~ the tree structure;

    (c)   using select bits from the packet to traverse said tree structure until the threshold is met;

    (d)   storing in a Contents Address Memory (CAM) at least one entry based upon a predetermined characteristic of the packet and a second predetermined characteristic of said tree structure;

    (e)   reading the CAM; and

    (e1)   using information at the at least one entry to access a memory location whereat action to be taken relative to the packet is stored.

2.   (Original)   The method of Claim 1 wherein N includes the first sixteen bits of a Destination MAC Address.

3.   (Original)   The method of claim 2 wherein the tree structure includes a plurality of nodes and leaves operatively coupled to selected nodes.

4.   (Original)   The method of claim 3 further including Pattern Search Control Blocks (PSCBs) carrying search information positioned at selected nodes.

5.   (Canceled)

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6.   (Original)   The method of Claim 2 wherein the selected bits include the remaining thirty two bits of the Destination MAC Address.

7.   (Original)   The method of Claim 2 wherein the second predetermined characteristic includes leaves.

8.   (Currently Amended) A method for correlating a search key with a database comprising the acts of:

    (a)   using N bits, $N \geq 1$, from the search key as an index into the database including entries having a Direct Table with at least one entry and [[a]] at least one tree structure operatively coupled to said one entry;

    (b)   setting a threshold based upon a fixed predefined number of nodes to be traversed in ~~first predetermined characteristic of~~ the tree structure;

    (c)   using M bits (M > 1) from the search key to ~~access~~ traverse said tree structure until the threshold is met; and

    (d)   reading from a CAM information that indicates action to be taken relative to the search key.

9.   (Original)   The method of claim 8 wherein the search key includes a portion of a data packet.

10.   (Original)   The method of claim 9 wherein the information includes the address of a leaf in which the action is stored.

11.   (Original)   The method of claim 8 wherein the reading step further includes the step of using the N bits as index into the CAM.

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12. (Original) An apparatus comprising:

an embedded processor complex including a plurality of protocol processors;

a control point processor operatively coupled to the processor complex;

a plurality of hardware accelerator co-processors accessible to each protocol processor and providing high speed pattern searching, data manipulation and frame parsing;

at least one memory device, operatively coupled to the processor complex, that stores data structures including a Direct Table, nodes and leaves operatively chained together; and

a Memory location operatively coupled to the processor complex and storing a value representative of the maximum number of nodes to be accessed during a tree search routine.

13. (Original) The apparatus of claim 12 further including a Contents Address Memory (CAM) operatively coupled to the processor complex and storing a pointer identifying a location whereat a leaf is stored.

14. (Original) The apparatus of claim 13 wherein the leaf contains information on actions to be taken relative to a packet.

15. (Original) The apparatus of claim 14 wherein the CAM further includes an indicia paired with the pointer, said indicia being selected from a portion of the packet.

16. (Original) The apparatus of Claim 15 wherein the indicia includes a portion of a Destination MAC Address in the packet.

17.   (Previously Presented)   The apparatus of Claim 15 further including a circuit that deletes pointers from the CAM based upon leaf adjustment in the tree structure.

18.   (Original)   The apparatus of Claim 17 wherein the leaf adjustments include deletion.

19.   (Original)   The apparatus of Claim 12 wherein the Control Point Processor is programmed to generate and forward frames containing information that adjusts the data structure.

20.   (Previously Presented)   The apparatus of Claim 19 wherein the adjustment includes leaf deletion or insertion.

21.   (Currently Amended)   A data structure comprising:
        a Direct Table having at least two entries;
        a tree structure operatively coupled to <u>each one of</u> the at least two entries and having a plurality of nodes and leaves operatively chained together; and
        a storage storing a threshold value indicating the maximum <u>a fixed predefined</u> number of nodes to be accessed during a walk of said tree structure.

22.   (Currently Amended)   The data structure of Claim 21 further including Contents Address Memory, CAM, in which leaf information is stored if the leaf is connected to a node <u>whose count is</u> above the threshold value.

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23.   (Currently amended)   The data structure of Claim 22 further including a co-
       processor responsive to at least a command to use part of the DA
       (Destination Address) of a packet to index into the DT (Direct Table) and the
       remaining part of said DA to search the associated tree, said co-processor
       selecting, information stored in a leaf if the leaf is attached to a node whose
       count is below the threshold value or selecting information stored in the CAM
       if the leaf is attached to a node above the threshold value.

24.   (Canceled)

25.   (Canceled)

26.   (Previously Presented)   The apparatus of claim 15 further including a circuit
       that delete pointers from CAM based upon non-use of the information within a
       predefined time interval.

27.   (Previously Presented)   The method of claim 19 wherein the adjustment
       includes leaf insertion.

28.   (Currently Amended)   A method comprising:
              providing a data structure configured as a tree having N nodes, N >1,
              and M leaves, M >1, operatively coupled to the N nodes;
              generating with a first processor a key from a packet;
              setting a threshold having a value ~~relating to~~ equal to a fixed
       predefined number of the N nodes to be traversed;
              providing in a CAM at least one entry with information relating to the
              key and information relating to the data structure;

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selecting, with a second processor, bits from the key and traversing the
tree based upon the bits until the threshold is met; and
reading at least one entry in the CAM to detect a location whereat
action to be taken relative to the packet is stored.

29.   (Previously Presented)   The method of claim 28 further including providing a
Direct Table (DT) having at least on entry operatively coupled to said tree.

30.   (Previously Presented)   The method of claims 28 or 29 wherein information
relating to the key including a destination address in said packet.

31.   (Previously Presented)   The method of claims 28 or 29 wherein the
information relating to the data structure includes an address where at least
one of the N leaves is stored.

32.   (Currently Amended)   The method of claim 28 [[25]] wherein the tree walk and
CAM search are being executed sequentially simultaneously.

33.   (Previously Presented)   The data structure of claim 22 further including a
pointer provided in said storage, said pointer identifying address of said CAM.

34.   (New) The method of claim 1 or claim 8 wherein traverse of the tree structure
and CAM read are performed sequentially.